

**URS****Tuchman Cleaners**Site # **1991 02 503**

Site Characterization

December 12, 2003

Indiana Department of Environmental Management  
100 North Senate Avenue  
P.O. Box 6015  
Indianapolis, IN 46206-6015

Attention: Ms. Dawn Shirley  
State Cleanup Program, Office of Land Quality

Addendum  
Remedial Investigation (RI) Work Plan, Phase II  
Tuchman Cleaners Facility  
4401 N. Keystone Ave.  
Indianapolis, Indiana  
Incident #1991-02-503

DEC 15 2003

On behalf of Tuchman Cleaners (Tuchman), URS has prepared this letter in response to comments provided by the Indiana Department of Environmental Management (IDEM) in a letter dated October 14, 2003. The comments were provided by IDEM in response to the August 19, 2003 Phase II RI Work Plan for the Tuchman facility at 4401 North Keystone Avenue, Indianapolis, Indiana. IDEM's comments are re-printed below in bold italicized type followed by Tuchman's responses in plain type. This letter is to be added to the Phase II Work Plan to provide modified project direction in response to IDEM's comments. If these responses are acceptable to IDEM, please place this letter into each copy of the Phase II RI Work Plan as an addendum.

- 1. As stated in IDEM's previous comments letter dated June 18, 2003, permanent monitoring wells are necessary to further characterize the intermediate and deep aquifers. While piezometers are useful as an investigative tool for determining ground water flow direction, they do not fulfill Indiana's requirement for permanent monitoring wells as stated in 312 IAC 13-8-3(b)(2). If groundwater contamination is discovered at a piezometer location, a permanent monitoring well must be installed at a later date. Installation of permanent intermediate and deep monitoring wells is crucial to accurately interpret hydrologic conditions. IDEM wishes to clarify this issue prior to the investigation and expenditure of funds.*

Tuchman acknowledges IDEM's guidance on monitoring well construction and intends the Phase II scope to adhere to it as closely as possible. With respect to the deep groundwater zone, the planned assessment point is intended as a piezometer but will be constructed following monitoring well design. This approach was selected to ensure greater integrity of the measurement point (considering the depth)

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and to allow use for monitoring in the future if necessary. However, at this time, the intended use of the planned point is for groundwater flow evaluation only.

With respect to the intermediate groundwater zone, although the locations of the intermediate assessment points are not established, the initial expectation is that they will be installed inside of the facility. As stated in Section 4.1.2 of the work plan, these borings will require a surface casing to minimize the potential for downward migration of shallow impact during installation. The overhead and doorway access dimensions of the facility limit the size and strength of drilling equipment that can be used. These limitations prevent the installation of monitoring wells conforming to IDEM guidance. Accordingly, Tuchman hereby requests a variance from the requirement for the installation of 1-inch inner diameter (ID) assessment points for the intermediate groundwater zone.

2. *The information in Section 4.2 of the Work Plan describing the hydraulic testing is vague. Prior to the implementation of pumping tests, additional data must be gathered and evaluated by the contractor. The locations and logs of the Indianapolis Water Company (IWC) wells must be provided along with data showing the typical pumping rates and conditions for the wells. Examples of the type of questions that the contractor needs to answer include: Are multiple IWC wells pumped simultaneously? Are the IWC wells pumped alternately? Seasonally? Do the pump rates vary? Are all wells periodically shut down, and for what length of time? Are additional wells, either public or industrial, located in the immediate vicinity influencing local conditions? Once these data are considered, pumping tests at ambient conditions, with the up-gradient well active, the down-gradient well active, the on-site production well active, and both IWC wells active should be performed.*

Through extensive communication with IWC, URS has improved our understanding of IWC operating procedures and available data. The IWC Fall Creek facility collects groundwater from eight wells located within 1 mile of the facility, as illustrated in Figure A-1. The older production wells (FC-2, FC-5, FC-7, FC-8, and FC-11) were installed prior to 1920 and are screened within the bedrock underlying the unconsolidated groundwater zone. The more recent wells (FC-17, FC-18, and FC-19) were installed in 1988 and 1989 are screened within the deep sand and gravel unit immediately above the bedrock. The wells are pumped at fixed rates on an unscheduled basis dependent upon need. Operators maintain a rotation sheet, but have flexibility to select any well for pumping. Individual wells are occasionally pulled off-line for repair or maintenance, although IWC prefers not

to do so during the summer. All documentation regarding pump operation is recorded chronologically on daily log sheets that are archived with IWC. There is no scheduled fluctuation of pumping rates or alternating pumping on a short term or seasonal basis.

Boring logs for the earlier wells are not available. IWC maintains boring logs of the more recent wells and URS is currently obtaining copies of the boring logs. URS will forward copies onto IDEM once they are secured.

URS conducted a recent search of the Water Well Record Database maintained by the Indiana Department of Natural Resources (IDNR) Division of Water and found 176 wells registered within 1 mile of the facility. Approximately 46 percent of these wells have recorded installation dates of 1970 or later. Most wells (greater than 80 percent) installed prior to 1970 were domestic/home wells and are focused within neighboring developments upgradient or crossgradient of the facility. It is anticipated that most, if not all of these residences were switched over to public water supply and these wells are no longer used for potable use.

Twenty-eight (28) of the registered wells are identified for industrial use and/or were tested for greater than 70 gallons per minute (gpm) yield. Eight (8) of these wells are downgradient (west and/or south) of the facility, including six that are registered to IWC, the state fairgrounds, or the Indiana School for the Deaf.

The impact of these wells on the planned hydraulic testing will be considered in the data evaluation stage.

3. *The proposed short-term pump tests may not provide sufficient data to show actual effects on the aquifer(s). The length of time required to procure accurate data will depend on the planned pumping rate. If the aquifer has a high capacity, a higher pumping rate will take longer to reach steady state. Alternatively, it may also take some specific time or pumping capacity for pumping in one aquifer to affect other water bearing zones. The contractor must provide data showing why the short-term tests will provide accurate data. This information will be vital for remedial design. Incomplete aquifer testing can show a plume at steady state conditions when, in fact, it is not under certain pumping rates.*

The objective of the hydraulic testing program outlined in the RI Work Plan, Phase II is to evaluate the hydraulic response of the intermediate and deep groundwater zones to changes in the background pumping. More specifically, it is intended to

help evaluate why significant groundwater flow direction changes were observed during the Phase I RI. A thorough hydraulic testing of the regional bedrock aquifer is not the intent of the scope of work.

Tuchman will work with IWC to effect the startup of two of their production wells closest to Tuchman in sequence while monitoring piezometric conditions onsite such that any changes in groundwater flow conditions can be potentially correlated to production well use in the vicinity.

4. *Shallow and intermediate borings are needed between OSP-16 and 17. While only temporary monitoring wells are planned for this phase of investigations, a permanent intermediate well is needed south of the facility on the east side of Keystone Ave. An additional permanent shallow well is needed between MW-14 and OSP-14, along the west side of Keystone Ave.*

Significant uncertainty still exists regarding groundwater flow direction in the vicinity of the facility. The intermediate groundwater zone demonstrated two opposing conditions independent of the shallow groundwater zone during the drawdown evaluation in March 2003. The shallow groundwater flow direction is also anticipated to change offsite depending upon the thickness of the zone downgradient. Consequently, Tuchman maintains that a prudent approach is to use piezometers for evaluating groundwater flow direction and to map the plume distribution with temporary groundwater sampling points prior to identifying long-term groundwater monitoring needs and selecting any additional monitoring well locations.

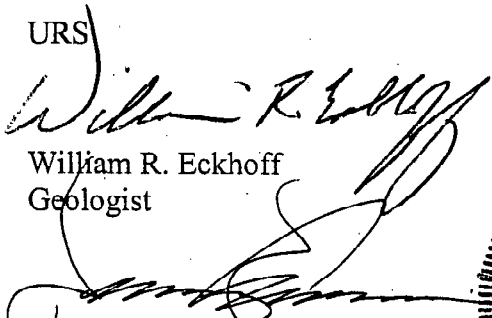


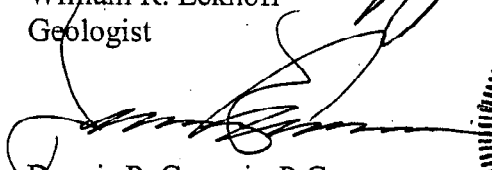
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If there are any questions regarding this letter, please do not hesitate to contact the undersigned at 513-651-3440 or Dr. G. M. Zemansky representing Tuchman Cleaners at 785-841-8540.

Very truly yours,

URS

  
William R. Eckhoff  
Geologist

  
Dennis P. Connair, P.G.  
Principal

WRE/DPC/Tuchman server  
30351-031-121

Attachment

